Institut für Gravitationsforschung

## Results of experiments performed by the IGF on the topic

# "AETHER CONTROL via an understanding OF ORTHOGONAL FIELDS“

As of: February 2007

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## 1.0. Cause of investigations

Rick Andersen published in Feb. 1998 a theory about "AETHER CONTROL via an understanding OF ORTHOGONAL FIELDS".

Rick Andersen stated , the flow of a high pulsed current by a toroidal core would, caused by the magnetic field within the toroidal core ( assuming that the magnetic field lines are completely inside of the toroidal core), can affect an existing aether outside the toroid, thus producing a gravitation-like force.

In May 1999 the "Telos Research" build an experimental structure based on Rick Andersons theory and confirmed Andersons statement that a steel nail (without magnetic field outside of the single-aperture core) or a small light weight sheet of paper would be moved, a laser beam influenced.

References:

http://67.76.239.187/vectorpot1.asp
http://www.tricountyi.net/~randerse/ortho1.htm
Both links are no longer active.

Original contents of the text within these a.m. links can be found under Andersen and Telos Research on our homepage.

Follow link for a Spanish translation of Rick Andersens theory http://www.geocities.com/Area51/Starship/9201/ortho/orthotrad.html?200715.

At first Andersens considerations appeared reasonable. As described by Telos Research, we examined if force caused by an influence of an aether field would affect a steel nail a light piece of paper or a laser beam or if conventional physics could explain the effect.

## 2.0. Structure of the experiment

While manufacturing the toroidal core we closely oriented ourselves on the coils illustrated by Telos Research. We used two commercial ferrite core coils with extreme small leakage fields. On the larger toroidal core (outer diameter 43.5 mm) we had 63 windings, wire size of 1, 0 mm Cu coated wire, and the smaller toroidal core (outer diameter 33.5 mm) had 30 windings with a wire size of 1.5 mm Cu coded wire. (see Fig. 1).

Fig.1: Toroidal coil combination L1, L2.
Coil apparently seems smaller due to the yardstick in the foreground.

Measurements with a RCL meter resulted in following electrical values:

| | smaller coil L1 | | larger coil L2 | | Coil combination (parallel connection) | |
|---|---|---|---|---|---|---|
| Frequency | Inductance | Ohm | Inductance | Ohm | Inductance | Ohm |
| DC | | 11 | | 63 | | 9,6 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | mOhm | | mOhm | | mOhm |
| 100 cycles per second | 53,0 µH | 12 mOhm | 26,2 mH | 0.77 ohms | 52,0 µH | 12 mOhm |
| 1 kHz | 59,0 µH | 14 mOhm | 24,9 mH | 4.61 Ohm | 58,3 µH | 13 mOhm |
| 10 kHz | 58,9 µH | 51 mOhm | 23,1 mH | 24.1 Ohm | 58,1 µH | 50 mOhm |
| 100 kHz | 58,2 µH | 1.62 Ohm | 26,2 mH | 1,61 kOhm | 57,5 µH | 1.59 Ohm |

As pulse voltage sources we tested different capacitor combinations (see Fig. 2)

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Fig. 2: Testing different capacitor combinations

In the process of the test series we preferred to use the condenser battery (black electrolytic capacitors) seen in fig. 2 below with an overall capacity of 4800 µF and maximum DC voltage by 400 V. In some measurements series the condensers were loaded without problems to 500 V. Charged by means of alternate current and rectifier .

In order to protect the experimenter against dangerous contact current, the capacitors bank was built into an isolating housing (see Abb. 3 and Abb. 4).

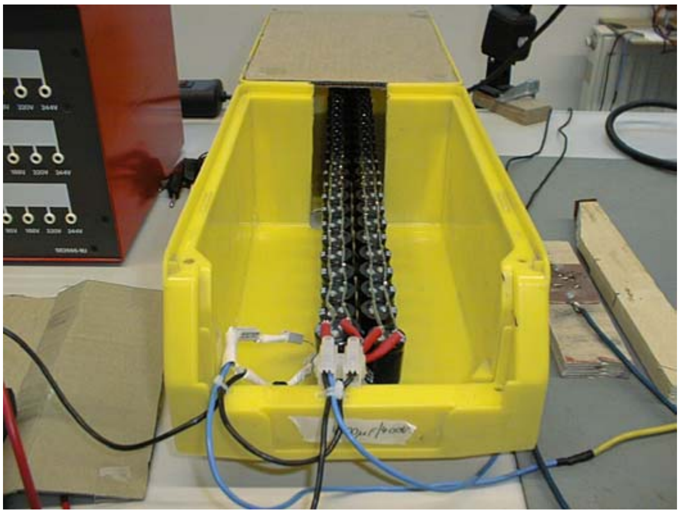

Abb. 3: Installation of capacitor bank into an isolated housing

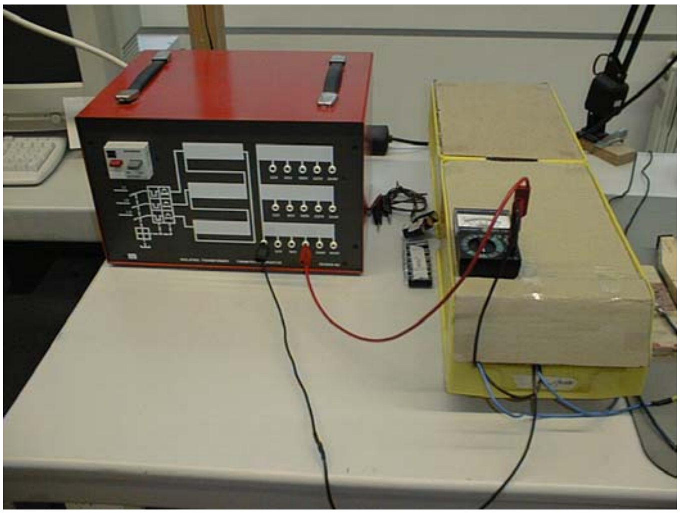

Abb. 4: Alternate current (left), by means of a electric rectifier (in the isolated housing right, together with the capacitor bank ) loading the condensers to a max. of 500 V.

During discharging the capacitors bank (discharge current has only two toroidal coils) an extremely high current flows for a few milliseconds, in which the electricity in the condensers is reduced. No conventional switches can be used to safely switch the current on and off. The contacts would irreversibly be welded together. Therefore we manufactured (a primitive looking but extremely well working) circuit-breaker out of two copper sheet contacts mounted on an insolated wood grasps, (see fig. 5 and fig.6). Switching the contact area from right to left was done by means of using the wood grasp with appropriate muscle power and speed to press it on to the left part.

Fig. 5: Two new copper sheet contacts (power switch)

Fig. 6: Copper sheet contacts (power switch) after approx.50 times used as switch

In fig. 1 to fig. 6 equipment and components were interconnected to following electrical structure (see fig. 7).

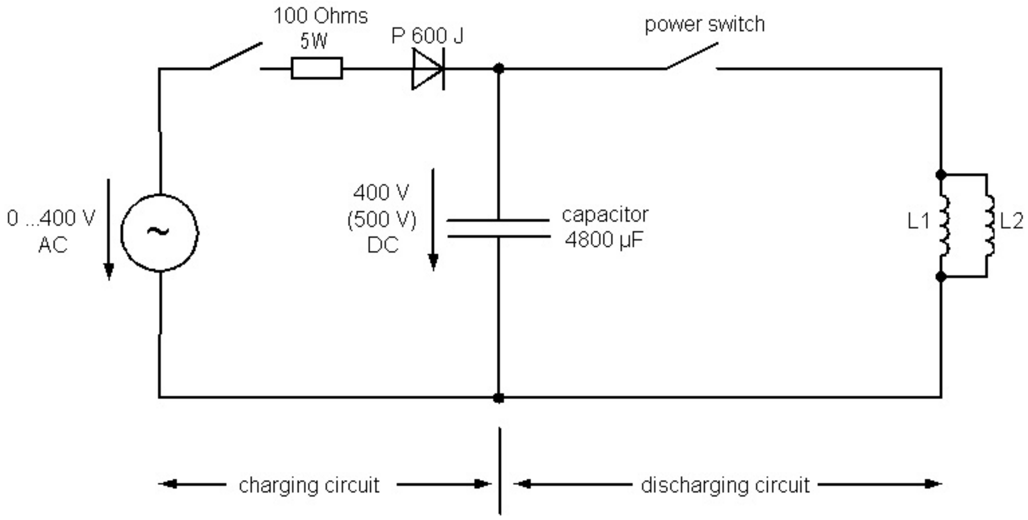


Fig. 7: Load and discharge current circle

## 3.0. Implementation of test series
## 3.1. Reproduction of Andersen and Telos Research results and execution of IGF test series and visible effects

During our first attempt we fastened a pin ( steel with plastic head, weight 85 mg) to a paper strip, placing the pin axially within the two coils. As soon as force was executed on the pin it started to visibly swing together with the paper strip. (see fig. 8 and fig.9). The acryl glass housing protected the structure from air draft .

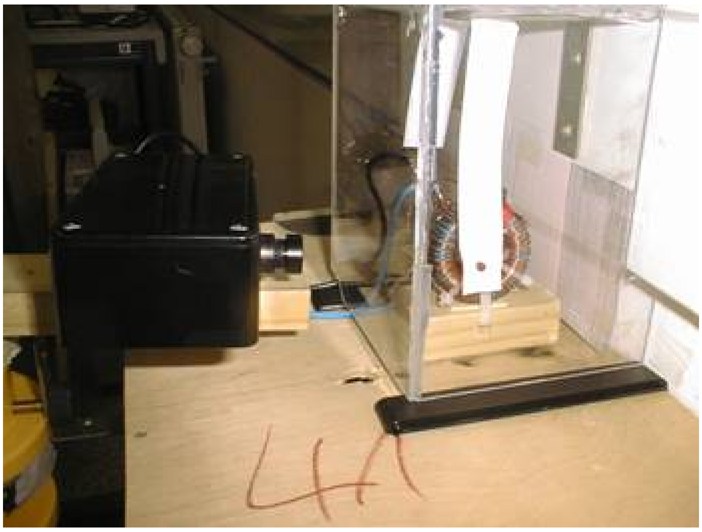

Fig. 8: A match is fastened to the paper strip, on the left camera to register movements of pin/match and paper stripe

Fig. 9: Side view of fig. 8

Observations:

Using the steel pin as sample, the pin and the paper strip to which the pin was fastened, showed strong and violent oscillations for several seconds while unloading the capacitor bank (4800 µF, loaded on 400V)

Repeated tests brought always the same, clear and visible results. Using a match as alternate sample , only a very small swing of the systems match-paper strip appeared visible. In this of the repetition only one part showed a light swing..

These observations correspond with Andersen and Telos Research data. During the discharge process however we observed that the blue and black parallel leads of the toroidal core moved shortly quite strong. Obvious the jolt movements of the two wires (caused by mutual magnetic influence during the high discharge current impulse) within the acryl glass housing produced air movements , which again could have brought the system paper sample to swing.

### 3.2. Elimination of environmental influences and mechanical influences

First the experimental setup was placed on a solid granite tile placed on the buildings foundation to prevent vibrations, (which can occur using a laboratory table ). The electric lines were no longer in parallel order. They were placed away from each other along the sides of the experimental setup using strong textile tape, glued on to the granite tile, reducing substantially the jolt movements of the lines during discharging. The toroidal core was glued, together with a wood underlayer to the granite tile. The paper strip fastened to a small wood frame, alternately all other samples (see fig. 10 and fig. 11). The assembly was protected by the acryl glass housing against air movements within the laboratory.

The movements of the samples and paper strips were registered with a camera (see fig. 12 and fig. 13).

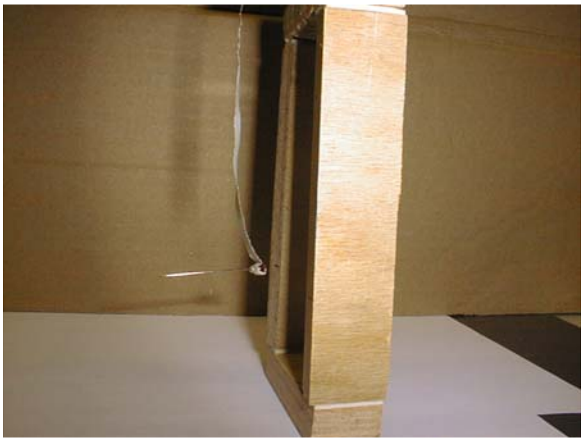

Fig. 10: Pin (with head), paper stripe fastened on wood frame.

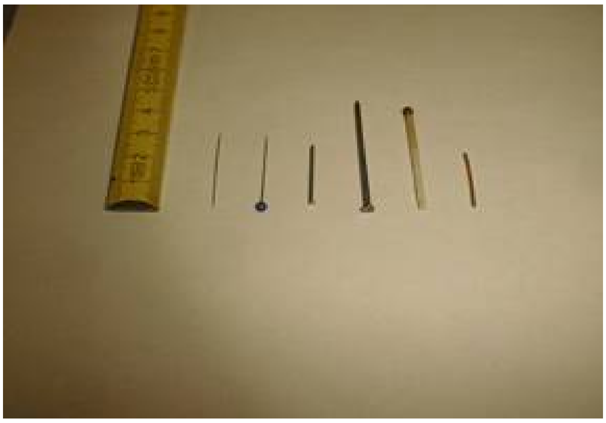

Fig. 11: used samples, from left: steel pin (without head) m = 66mg; steel pin (with head) m = 85 mg; steel nail m = 301 mg; steel nail m = 1437 mg; match; piece of copper wire.

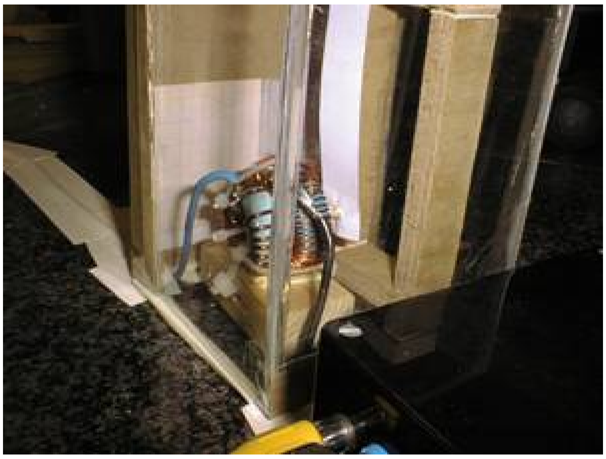

Fig. 12: Structure on granite tile, lines glued together

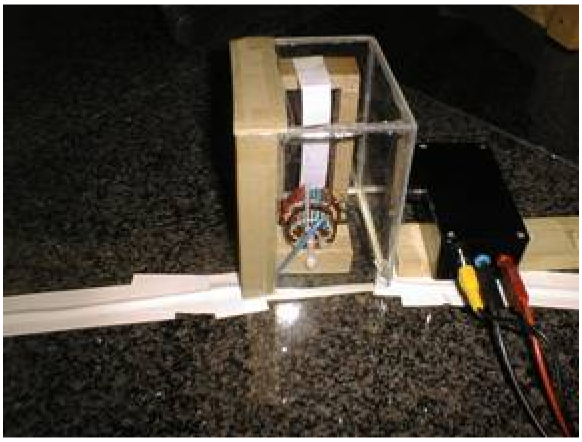

Fig. 13: Side view of fig. 10

### 3.3. Repeated tests after error elimination

After completing o. m. changes , the match showed no movements during or after discharge despite numerous attempts. The sample piece of a copper wire (see fig. 11) showed also no movements. The steel pin however showed intense oscillations a few seconds long, caused by discharging. Obviously that the soft movements of the match, (see point

3.1.) was caused by a strong jolt of the supply cables which consecutively caused air turbulences.

The jolts of the supply cables were reduced so far down to eliminate an affect on the match. At this point it was obvious that the power transmission impact on the sample was probably of magnetic nature, as only the steel needle reacted. The match and the copper piece showed no reaction. Telos Research describes an experiment in which a light paper peace , placed on a toroidol core combination was moved upward and fell down right beside the coil combination. We reproduced this effect. A paper peace placed exactly centrically on our toroidal coil , was slightly moved as consequence of the discharge process and shifted to the edge of the coil combination (see fig. 14) So far we were not able to suppress the jolt of the supply cables completely during discharge.

These jolts surely affected the toroidal coil combination (not visible with bare eyes ) followed by mechanical movements which changed the position of the light paper peace. To avoid the mechanical movement of the coils, we put over the coil combination a small plastic box to prevent contact with the coils. The paper plate was placed on the plastic box centrically above the coils (see fig. 15 and fig. 16).

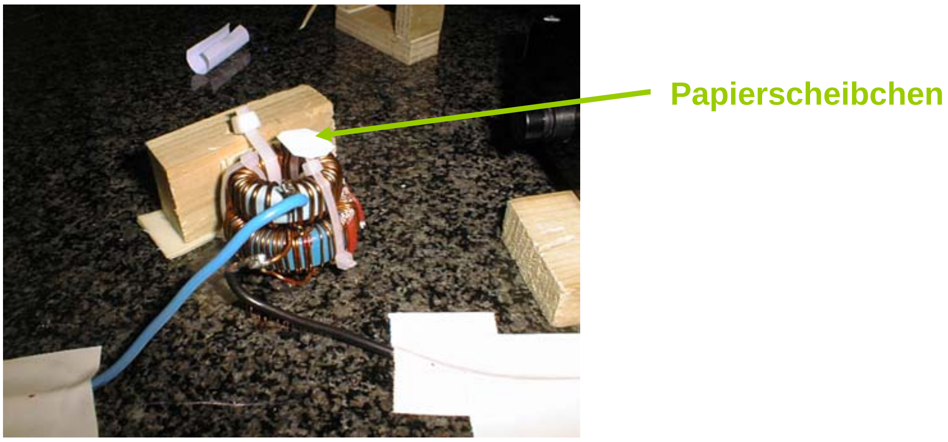


Fig. 14: Paper piece moved from center to the side

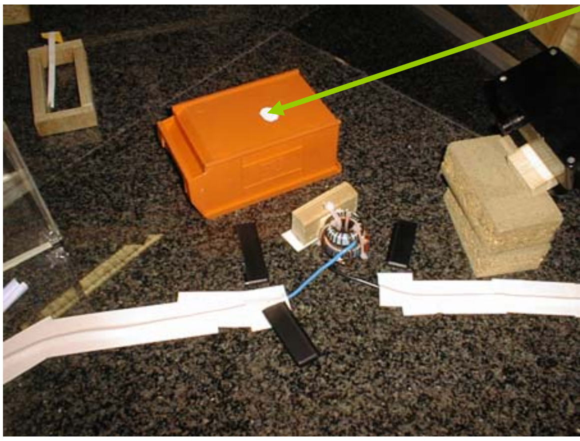


Fig. 15: Plastic box still is apart from the coil combination

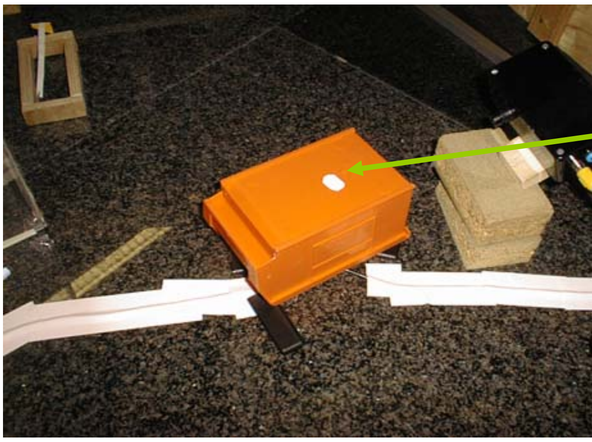


Fig 16: Coil combination under/in the plastic box,
paper peace lies centrically over the coil combination

**Observation:**

Discharging the condenser battery (after numerous test) no movements of the paper peace was observed. Obvious that the prior detected movements of the paper peace ( placed directly on the toroidal coil combination), was solely of mechanical nature because the jolting of the supply lines could not totally be suppressed during discharge thus transporting mechanically on to the toriodal core combination and the paper plate .

### 3.5. Proof of a relatively high magnetic flow density, caused through magnetic leakage fields

After our previous knowledge it was certain , that the movements of the samples were **not** caused by an influence of the aether. They were purely of mechanical nature (for all samples) and magnetic nature (e.g. for steel needles). Magnetic influences were observed closer to determine the dimension of the magnetic sizes. First we examined further attempts of Telos Research, by testing whether and how far steel needles and steel nails were hurled out of the toroidal coil combination (see fig. 17).

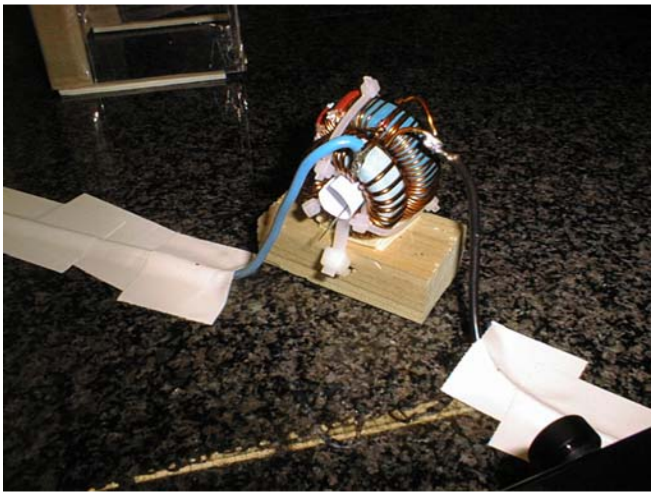

Fig.. 17: Steel needle looking out of the toroidal coil combination

First a paper plate was inserted in to the coil to prevent steel needles and steel nails, used as samples, to be jammed between the copper windings of the coil. After numerous attempts we noticed that each discharge of the condenser battery, the steel samples would ***always*** move from the large coil toward the small coil, also by reversing the discharge current direction. The movements were proportional to the current charged onto the capacitor. The condenser capacity stayed at 4800 µF. Another criterion was the weight of the steel samples and how far they would be hurled and moved. The pin (without head) m = 66 mg was hurled, up to 30 cm, the steel nail, m = 1437 mg (see fig. 11) moved only some mm pro discharge. Due to these effects it was obvious,

that magnetic leakage fields outside of the toroidal core of both coils moved the steel needles and steel nails. Rick Andersen idealization, that ***all*** magnet field lines concentrate within the toroidal core without any exception is unrealistic. Daily practice in handling toroidal coils and toroidal core transformers showed magnetic leakage fields outside the toroidal core in the range of 1 per thousand up to 1 per cent of the main magnetic field within the ring. Fact is, that reversing the discharge of the current direction did not caus reversing the direction of the steel needles and steel nails. They always move toward the larger flux density. This is the reason, why the iron core of an electric relay always moves in the same direction independent from the current direction in the coil. The observed movements were always from the larger to the smaller coil. The smaller toroidal coil had a much larger magnetic flux density of the magnetic leakage field, as the larger coil. During measurements of the magnetic leakage fields a problem emerged: The discharge of the capacitor battery takes place in a fraction of one second. Measuring equipment of high standards such as a (Teslameter, F. W. Bell, Series 9950) could not seize the strength of the magnetic leakage fields within such a short time (see also fig. 19). Therefore we considered an alternative method to determine the range of the leakage fields.  In place of the capacitor battery of 4800 µF, partially charged up to 500 V and current availability of only seconds, a conventional motor vehicle battery (12 V, 36 Ah) was used. The battery supplied for several seconds high currents in the range of 100 A giving the Tesla meter sufficient time to measure the magnetic flux density. (see circuit diagram fig. 18).

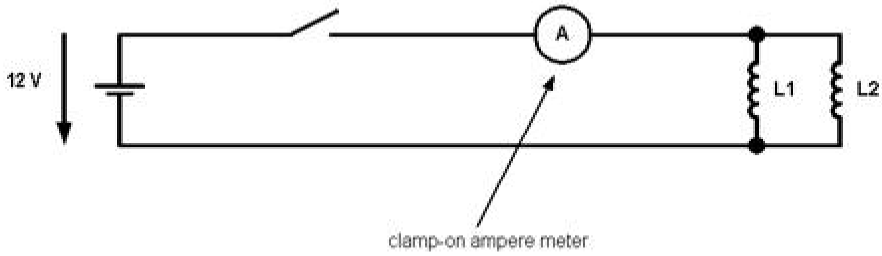


Fig. 18: Circuit diagram to determine the order of magnitude of the magnetic leakage fields

To measure the expected high currents, a clamp-on ampere meter was used displaying the size of the electric current on a conventional circuit analyzer (see fig. 20).


Fig. 19: Teslameter, F. W. Bell, Series 9950; in calibration phase of equipment

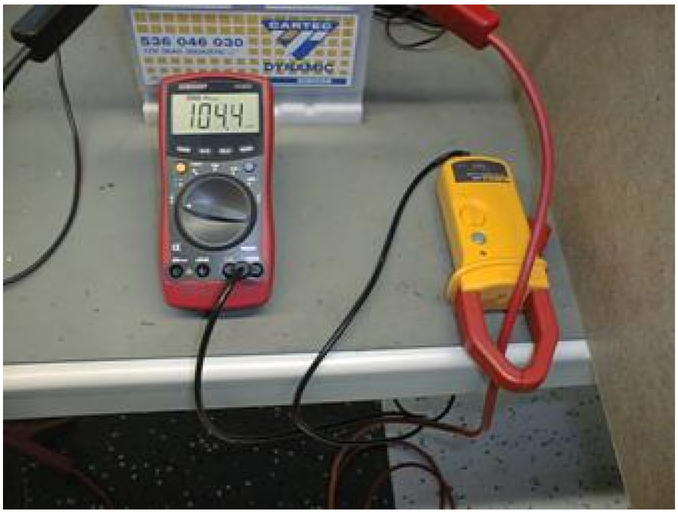


Fig. 20: Motor vehicle battery, cclamp on ampere meter, coupled multimeter

**Measuring the flux density of the magnetic leakage fields:**

Fig. 21 represents the positions where the flux density of the magnetic leakage fields was measured.

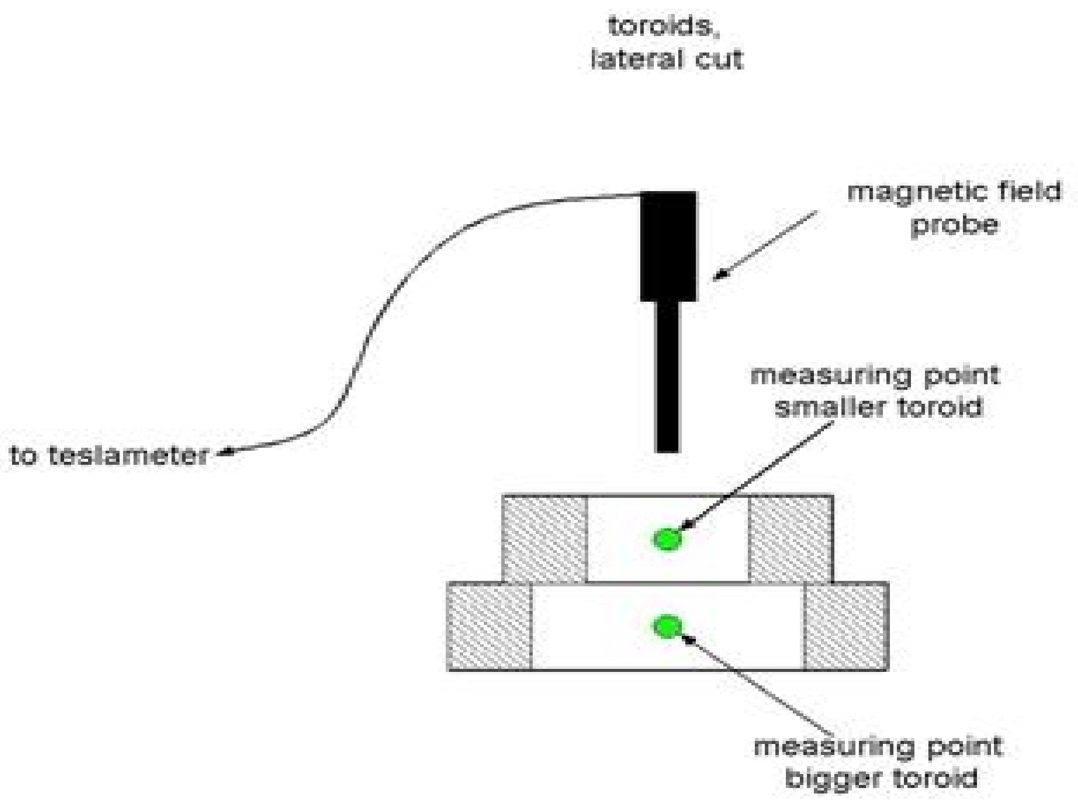


Fig. 21: Crosscut of the toroidal core combination and marking of two measuring points

Fig. 22 shows the top point of the measuring probe diving into the coil combination.

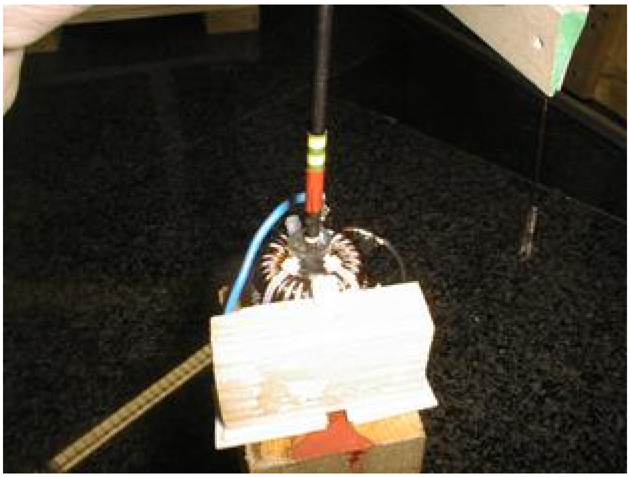

Fig. 22: Measurement of the leakage fields of the two toroidal coils

**Results of the measurements of the magnetic leakage fields**:

Average values of the accomplished measurement series at measuring points see fig. 21 above.

| | magn. Flux density B [ mT ] |
|---|---|
| smaller toroidal coil | 4,3 mT |
| larger toroidal coil | 0,5 mT |

Reversing the polarity of the current flow direction resulted only in reversing the algebraic sign of the magnetic leakage fields.

The current flowed until the Tesla meter had recorded the measured values safely (usually approx.. 3 to 4 seconds) avoiding that the lines and the copper windings of the toroidal coil would immediately heat up.

Measurements proved, that in the smaller toroidal coil a magnetic leakage field was actually measured, which had a nine time higher leakage field as the larger coil compared with earth's magnetic field of approx. 40 µT, the leakage field in the smaller toroidal coil was larger by the factor of 100 .

The idealized view as assumed by Rick Anderson , that a toroidal coil can not produce a leakage field is out of question.

Notice:
The two leakage fields (4.3 mT and 0.5 mT) were measured with 12 V voltage and a "constant current“ (duration: 3 to 4 seconds) of approximately 100 A. The 66 mg steel needle moved approx. 2 cm with power switched on.

Remember:
The toroidal coil battery of 4800 µF as current supply and voltage in the range of 400 V to 500 V the 66 mg –steel needle was hurled up to 30 cm far away (see point 3,5.).

Consequently:
The magnetic leakage fields, produced by discharging the 4800 µF condenser battery, had to be much larger than those measured with 12 V and 100 A.

### 3.6. Remarks pertaining the laser beam

An investigation, whether a laser beam, led by the coil combination was affected in any way (as stated by Telos Research), was not executed.

Fact:
All photographs of needles and other samples, taken with an electronic camera,(s. o.) had disturbances during discharge of the condenser battery. Pictures were blurred with short disturbing strips and insignificant change of picture size.

Cause:
closing the circuit-breaker caused a strong electric arc during discharge of the condenser battery, melting some parts of the copper contacts (see fig. 6). Electric arcs disturb electronic devices, which consequently resulted in bad quality photographs taken with electronic cameras. Due to these disturbances there is really no meaningful statement possible.

## 4.0. Result: Observed effects explained by conventional physics

All effects that we and Telos Research observed and described by Rick Andersen were either of mechanical or electromagnetic origin. There is no influence of a surrounding aether to explain the observed effects.

## 5.0. Possible source of error

Errors were uncovered during test series, which led to believe that unexplainable physical influences would cause the observed effects.

They had been :

- parallel line tracings (if fastened insufficient) moved considerably due to there mutual magnetic influence.
- transmitting vibrations on the toroidal core to trigger the light paper piece to fall down
- -air movements produced swinging motions on the hung up paper strip samples.
- -air draft in laboratory can also cause movements and requires shielding
- -also high-quality toroidal coils produce magnetic leakage fields, able to hurl (with sufficient high discharge current)steel pins up to 30 cm far away.
- iron/steel objects moves always in direction of the larger magnetic flux density, independent of the polarity of the magnetic field and the current caused by the magnet field.
- Electric arcs (e.g. in the form of discharge sparks) produce electromagnetic disturbances affecting electronic devices.
- Taking pictures with an electronic camera during such disturbance is rather useless, disturbed pictures are of no significance.

## 6.0. Equipment

| Equipment type: | Manufacturer: | Type: |
|---|---|---|
| RCL meter | Fluke | PM 6304 |
| Teslameter | F. W. Bell | Series 9950 |

| | | |
|---|---|---|
| Flux valve | F. W. Bell | PAA 99-1908 |
| 12 V – KFZ battery | Cartec dynamic | 536,046,030 |
| Current pliers | Fluke | i 410 |
| Digital circuit analyzer | Voltcraft | VC 820 |
| Source of alternating voltage | LN | SE 2666-9U |

Waldaschaff, 01 March 2007
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Translation::
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